

## Claims

- [c1] 1. A method for improving the permeability of a well, the method comprising:
  - selecting a well suspected of containing polymer deposits; and
  - pumping a well treatment composition into the well, wherein the composition comprises water, a buffer, and hydrogen peroxide or a per-acid.
- [c2] 2. The method of claim 1, further comprising:
  - measuring the permeability of the well prior to the pumping step; and
  - measuring the permeability of the well after to the pumping step.
- [c3] 3. The method of claim 2, wherein the permeability of the well after to the pumping step is greater than the permeability of the well prior to the pumping step.
- [c4] 4. The method of claim 1, wherein the composition has a pH of about 3 to about 5.
- [c5] 5. The method of claim 1, wherein the buffer comprises acetic acid and an acetate salt.

- [c6] 6. The method of claim 5, wherein the acetate salt is sodium acetate, potassium acetate, or ammonium acetate.
- [c7] 8. The method of claim 1, wherein the buffer comprises formic acid and a formate salt.
- [c8] 8. The method of claim 7, wherein the formate salt is sodium formate, potassium formate, or ammonium formate.
- [c9] 9. The method of claim 1, wherein the buffer comprises citric acid and a citrate salt.
- [c10] 10. The method of claim 9, wherein the citrate salt is sodium citrate, potassium citrate, or ammonium citrate.
- [c11] 11. The method of claim 1, wherein the per-acid is peroxyacetic acid.
- [c12] 12. The method of claim 1, wherein the concentration of hydrogen peroxide in the composition is about 1 weight percent to about 6 weight percent.
- [c13] 13. The method of claim 1, wherein the concentration of per-acid in the composition is about 1 weight percent to about 15 weight percent.
- [c14] 14. The method of claim 1, wherein the composition fur-

ther comprises a peroxidase enzyme.

- [c15] 15. The method of claim 1, wherein the composition further comprises a phosphate salt or a phosphonate salt.
- [c16] 16. The method of claim 1, wherein the composition further comprises an iron-control agent, a surface tension reducer, a dispersant, a corrosion inhibitor, or a clay stabilizer.
- [c17] 17. A method for improving the permeability of a well, the method comprising:
  - selecting a well suspected of containing polymer deposits; and
  - pumping a well treatment composition into the well, wherein the composition comprises water and hydrogen peroxide.
- [c18] 18. A well treatment composition comprising:
  - water;
  - a buffer;
  - hydrogen peroxide or a per-acid.
- [c19] 19. The composition of claim 18, further comprising an iron-control agent, a surface tension reducer, a dispersant, a corrosion inhibitor, or a clay stabilizer.
- [c20] 20. The composition of claim 18, wherein the composi-

tion has a pH of about 3 to about 5.

- [c21] 21. The composition of claim 18, wherein the buffer comprises acetic acid and an acetate salt.
- [c22] 22. The composition of claim 21, wherein the acetate salt is sodium acetate, potassium acetate, or ammonium acetate.
- [c23] 23. The composition of claim 18, wherein the buffer comprises formic acid and a formate salt.
- [c24] 24. The composition of claim 23, wherein the formate salt is sodium formate, potassium formate, or ammonium formate.
- [c25] 25. The composition of claim 18, wherein the buffer comprises citric acid and a citrate salt.
- [c26] 26. The composition of claim 25, wherein the citrate salt is sodium citrate, potassium citrate, or ammonium citrate.
- [c27] 27. The composition of claim 18, wherein the per-acid is peroxyacetic acid.
- [c28] 28. The composition of claim 18, wherein the concentration of hydrogen peroxide is about 1 weight percent to about 6 weight percent.

- [c29] 29. The composition of claim 18, wherein the concentration of per-acid is about 1 weight percent to about 15 weight percent.
- [c30] 30. The composition of claim 18, further comprising a peroxidase enzyme.
- [c31] 31. The composition of claim 18, further comprising a phosphate salt or a phosphonate salt.